



## **News for Immediate Release**

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### **DWR to Use GPS Technology To Measure Land Elevations**

SACRAMENTO – The Department of Water Resources (DWR), together with 20 federal, state and local agencies, has installed and surveyed a land elevation measurement network in the Sacramento Valley. The Sacramento Valley Height-Modernization Project will allow land surface elevations to be accurately measured with Global Positioning System (GPS) technology using a consistent vertical datum known as “NAVD88.” After the survey data is published by the National Geodetic Survey, it will be used by DWR and other agencies for multiple purposes including monitoring for land subsidence induced by groundwater pumping, floodplain mapping, and public works projects.

Mark Cowin, DWR Deputy Director, said that in addition to the technical and planning achievements of this project, it demonstrates the benefits that can be achieved when state, federal and local agencies all work together with a common purpose. This is the type of collaboration that DWR is expecting statewide through integrated regional water management initiatives.

The GPS network, consisting of 339 survey monuments spaced about seven kilometers apart, covers all or part of 10 counties. It extends from northern Sacramento County eastward to the U.S. Bureau of Reclamation’s (USBR) Folsom Lake network, southwest to DWR’s Delta/Suisun Marsh network, and north to USBR’s Lake Shasta network. DWR and USBR shared the cost of a contract with Frame Surveying & Mapping, which coordinated field measurements involving 47 staff from various agencies. It is anticipated the network will be re-surveyed on a three-year frequency to measure elevation changes over time.

To complement the regional GPS network, DWR monitors 13 extensometers in the Sacramento Valley, a technology that produces a continuous record of elevation changes at one location. DWR also measures groundwater levels in monitoring wells near each extensometer. Together, these data show a correlation between land subsidence and groundwater declines during the growing season, and the land partially rebounding as aquifers recharge in winter. The Zamora extensometer record shows 0.5 feet of net subsidence (after rebound) from 1994 to 2007. Subsidence has also been documented in the Woodland and Davis areas.

*The Department of Water Resources operates and maintains the State Water Project, provides dam safety and flood control and inspection services, assists local water districts in water management and water conservation planning, and plans for future statewide water needs.*